

Notice of Allowability

Application No.

09/823,580

Applicant(s)

GOODMAN ET AL.

Examiner

James S. Wozniak

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the claim amendment from 3/22/2006.
2. ☒ The allowed claim(s) is/are 1-25 and 28-33 (now 1-31).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

Response to Amendment

1. In response to the interview on 3/21/2006, the applicant has submitted a supplemental amendment, filed 3/22/2006, amending claims 1, 14, and 24, while arguing to traverse the art rejection based on the amended limitations (*Amendment, Page 11*). The applicant's arguments have been fully considered, and claims 1-25 and 28-33 are allowable over the prior art of record for the below given reasons.

Allowable Subject Matter

2. **Claims 1-25 and 28-33** are allowable over the prior art of record.

3. The following is an examiner's statement of reasons for allowance:

With respect to **Claims 1, 14, and 24**, the prior art of record fails to explicitly teach or fairly suggest, individually or in combination, a method, computer program stored on a computer readable medium, or an apparatus for spell checking a word entered using a numeric keypad comprising: finding one or more potential non-corresponding words having key inputs different from an entered misspelled word and that are less than or equal to a maximum cost (*cost calculation, specification, Pages 14-15*), determining a probability for the potential one or more potential non-corresponding words based on at least one of a left or right input text using a

language model comprising probability values corresponding to sequences of word N-grams of a natural language that is trained in part and updated using words that a user has entered into a cache memory (*specification, Pages 21-22*), and presenting the one or more potential non-corresponding words to a user based upon the n-gram probability values. The prior art of record also fails to explicitly teach or fairly suggest the above noted misspelling correction limitations in combination with finding one or more corresponding words having identical key inputs to an entered text word and calculating a probability value for each of the corresponding words utilizing a language model comprising probability values corresponding to sequences of word N-grams of a natural language that is trained in part and updated using words that a user has entered into a cache memory.

Although Gilai et al (*U.S. Patent: 6,018,736*) teaches a means for identifying a list of possible non-corresponding words associated with a key input (*Col. 7, Lines 7-35*), Gilai does not teach or fairly suggest a means for calculating a probability value for each non-corresponding word using language models containing probability values corresponding to sequences of word n-grams in a natural language, which are updated based on user text that is entered into a cache memory.

Although Skiena et al (*U.S. Patent: 5,828,991*) teaches a means for determining a plurality of possible word choices for a text input and using a language rule to rank the possible choices (*Col. 11, Lines 20-47*), Skiena utilizes a fixed corpus for training the language rule and not user text entered into a cache. Also, Skiena also does not teach that the language rules are language models containing probability values corresponding to sequences of word n-grams in a natural language that are updated based on user text that is entered into a cache memory.

While King et al (*U.S. Patent: 5,953,541*) does teach a temporary vocabulary module (cache) for adding user vocabulary (*Col. 26, Lines 5-49*), King makes no mention of training language models in such a cache that contain probability values corresponding to sequences of word n-grams in a natural language or the use of such a cache in spell checking.

Thus, Claims 1, 14, and 24 are allowable over the prior art of record.

Claims 2-13, 15-23, 25, and 28-33 further limit allowable independent claims, and thus, are also allowable over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Nowlan et al (*U.S. Patent: 6,204,848*)- teaches the use of character sequence n-grams in text disambiguation for a reduced keypad input, but does not teach: the ability for a user to train such an n-gram with a cache memory input, the use of such an n-gram in spell checking, or the use of word sequence n-grams.


Art Unit: 2626

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632. The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached at (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James S. Wozniak
5/24/2006


DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600